

IMPROOF: Integrated model guided process optimization of steam cracking furnaces

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Abstract. IMPROOF will develop and demonstrate the steam cracking furnace of the 21st century by drastically improving the energy efficiency of the current state-of-the-art, in a cost effective way, while simultaneously reducing emissions of greenhouse gases and NO_x per ton of ethylene produced by at least 25%. Therefore, the latest technological innovations in the field of energy efficiency and fouling minimization are implemented and combined, proving that these technologies work properly at TRL 5 and 6 levels. The first steps to reach the ultimate objective, i.e. to deploy the furnace at the demonstrator at commercial scale with the most effective technologies, will be discussed based on novel pilot scale data and modeling results.